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REVIEWS OF BOOKS.

Implication and Linear Inference. By BERNARD BOSANQUET. Macmillan & Co., London, 1920.—pp. x, 180.

The short but pregnant treatise which Dr. Bosanquet has recently published under the above title, deserves to be ranked among the most important contributions to modern logical theory. It is not often that a great thinker takes the trouble to be his own interpreter. Yet this is what Dr. Bosanquet here is in respect of the main principles on which his large *Logic* had been built. These principles are now stated with a precision and lucidity which they hardly possessed in the earlier work, and which invite students to attempt a fresh estimate of their importance for present-day logic.

Inference is Dr. Bosanquet's term for "every operation by which knowledge extends itself" (p. 2), by which we attain truth transcending our premisses (p. 9, *n.*). It consists in "reading off" implications. Implication is what makes the operations of inference possible. It is that constitution or structure of any given topic or subject, and ultimately of the universe as a whole, which enables us, starting from certain data or elements (actual or supposed), to infer, *i.e.*, to determine other elements. Implication, in short, is the character of every genuine system or whole—of every complex of terms in relation, if we prefer that language—the elements of which vary concomitantly with each other, or depend mutually on one another in any way which justifies us in saying that *a* is so because *b* is so, and that *a* could not be what it is if *b* were other than it is. This functional correlation (as Mr. Bertrand Russell would no doubt call it) is summed up by Dr. Bosanquet in the aphorism that in a genuine whole "all is relevant to all." In the same sense he speaks of "the mutual responsiveness" of parts in a whole and even of the "life" of the whole in the parts. The central point is that a conjunction of elements becomes an intelligible correlation, *i.e.*, acquires the truly logical character of necessity only through "insight" into the system which supplies the law of mutual determination to the parts. Grasp the system and you have necessity: you understand why every detail is just what it is and cannot be otherwise. Miss the system and you have contingency: everything so far as you can see might be other

than it is, because you have found so far no reason why anything must be what it is actually found to be. Inference, then, is possible only where we have "a system with different features or properties, such that without being at all similar or repetitious of each other they present variations connected by law, and therefore the variation of one is an index to the variation of others" (p. 8). Such a system Dr. Bosanquet calls a "universal," and the purpose of his whole argument is to show that the universals which operate in inference and to which it owes its validity, are always concrete systems and not abstract general rules or formal axioms. Wherever there is insight into universals, there knowledge is self-evident and *a priori*. It follows that these characters are not the exclusive possessions of formal logic and mathematics, but are diffused, though with differences of degree, over the whole field of knowledge. They are present even in matters concrete and empirical, for they go with systematic connection wherever that is found. "The *a priori* is merely what comes clear and connected out of the mass of the *a posteriori*" (p. 127). On this basis Dr. Bosanquet challenges the fashionable doctrine which splits up the province of knowledge into a 'contingent' and a 'necessary' part. For him, the same principle of implication controls our inferences in both, and the recognition of this principle, in the different types of inference to which in different circumstances it gives rise, is the only road to "a unitary account of the apprehension of truth" (p. 19). Thus Dr. Bosanquet's theory seeks to embrace abstract axiom and concrete fact; reason and experience; deduction and induction; mathematics, empirical science, and philosophy, through the single principle that the extension of knowledge by reasoning depends everywhere "on the intrinsic necessity of a transparent system." A corollary of this doctrine is that "knowledge is, in principle, irrefragable" (p. 1); that it is "a contradiction in terms to repudiate knowledge as a whole." This presumption of the trustworthiness of knowledge Dr. Bosanquet crystallizes into the formula, "this or nothing." For we defend the truth of a proposition by appealing to the system in which it is implied, urging that the denial of the proposition would carry with it the denial of the system. For example, the only way to prove that $12 \times 12 = 144$ is to show that any other result upsets the multiplication table. If the system in turn is challenged, it must be defended by showing it to be implied in a wider system, and ultimately in the system of reality as a whole, such as we judge it to be in the light of our whole experience. Thus,

e.g., argument from facts of observation, here and now, implies the trustworthiness of perception, subject to certain tests, as guaranteed by our whole experience. But our whole experience contains much more than such facts and reasonings about them. In the daily conduct of civilized life, our inferences move, and move with systematic necessity, mainly within "the concrete worlds of religion, morality, truth, and beauty" (p. 94), and it is to these "great examples of complexes" that Dr. Bosanquet constantly looks as "the most central and exalted certainties of life, as well as the commonest and most practical" (p. 96). In thus appealing, in the very name of logic, to a wider area of certainty, he claims for his theory that it will "make logical certainty seem a more natural thing, and more in harmony with the experience of life" (p. 97).

Such, in outline, is the theory which Dr. Bosanquet opposes to the "linear" theory of inference, by which he means the traditional account of the syllogism as essentially subsumptive, and of inference as progressing by a chain of subsumptions hanging, in the last resort, on some self-evident, indemonstrable axiom. Of course, arguments *prima facie* subsumptive do occur. But they do not represent "the true type of progressive knowledge." They do not embody the ideal, still less the only logically valid, form of inference or of proof. His main criticisms of the syllogism are: (*a*) it relies on the mere conjunction of predicates in individual subjects, without insight into necessary connections; (*b*) its rules forbid recognition of system, by keeping its terms fixed and independent, so that they cannot through their correlation modify or throw light on each other; (*c*) it treats inference as if it depended exclusively on the subject-attribute relation; (*d*) its major premise is usually 'borrowed,' *i.e.*, accepted as true irrespective of the particular case which is subsumed under it, so that in turn it can get no corroboration from the case. Most of the current criticisms of the syllogism, and especially the attempts to substitute induction for it as the true account of reasoning, suffer, according to Dr. Bosanquet, from the fact that their authors have not emancipated themselves from the vices of the linear theory of inference. This applies particularly to all who conceive induction either as the transition by similarity from case to case, or as the subsumption of a fresh case under a generalization obtained by enumeration of previously experienced cases. In support of his own theory, Dr. Bosanquet urges especially the following considera-

tions: (a) Data of observation are corroborated¹ by the system in which inference assigns them a place. "Implication confirms their existence, and establishes the true character in which they exist. Observation establishes their bare existence as a something or other, but apart from insight into the complex gives us no security that we are apprehending the constituent members as they really are" (p. 77). (b) Where the data are ambiguous, *i.e.*, can be interpreted by alternative systems, we have the proper place for hypotheses to be verified by further observation and experiment. Even then, the selection of *relevant* hypotheses is guided by such knowledge as we have, which also guarantees any presumption there may be that among the hypotheses framed the true explanation must be found, *i.e.*, that the alternatives are exhaustive. In such relevance and exhaustiveness the influence of systematic knowledge is at work. (c) In this connection, Dr. Bosanquet has a critical bout with Mr. H. W. B. Joseph's theory of induction as the establishment of the surviving hypothesis by the 'elimination' of its rivals. His main points, and they seem to me good points, are that the rejection of *b* cannot establish *a* unless accompanied by fresh evidence which positively reënforces *a* on its merits; that in all this testing of rival hypotheses there is a constant *modelling* of the successful hypothesis going on; and that its final establishment as the true 'explanation' demands that we "so fuse the hypothesis with the data that the one cannot be affirmed without the other" (p. 100). (d) Moreover, the natural procedure in argument, *e.g.*, in a lawyer's presentation of his case, or in Darwin's presentation of the evidence for descent, does not follow the pattern of linear subsumption, but consists in so arranging the materials that direct insight into the system results. The illustration of this contention from Whitehead's *Introduction to Mathematics* (pp. 110 ff.) is especially interesting as bringing mathematical reasoning under Dr. Bosanquet's general principle.

Throughout, the argument abounds in interesting suggestions. Thus the concept of inference as the 'life' of a subject unfolding itself before the thinker's mind according to its own inner necessity, is applied, with obvious reference to Hegel, to philosophical dialectic (pp. 123 ff.). Again, whilst rejecting the literal restriction of reasoning to three terms and three propositions, Dr. Bosanquet insists on the recognition of three *phases* in all inference, *viz.*, the starting-

¹ I should be tempted to say 'hardened' with a play on Mr. Russell's concept of "hard" data.

point, the middle operation, and the resulting reinterpretation of the starting-point (Ch. VI). Lastly, he offers a successful defence against the criticisms which Mr. L. J. Russell, of Glasgow University, had urged in *Mind* (N.S., No. 108) against his account of supposition (Ch. VIII).

But no summary of the argument can, by itself, give an adequate impression of its importance. This can be fully appreciated only by setting it, as I shall now attempt to do, in the context of contemporary discussion, towards most of the fundamental tendencies of which Dr. Bosanquet takes up a challenging attitude.

1. It may be said that Dr. Bosanquet's theory is purely descriptive of the way in which we reason, whereas logic ought to be normative and examine the validity of our reasonings. But the reply is that logic is a normative science only in the sense that it deals with a self-normative process, and that its business is not to prescribe how that process is to be carried on, but to describe the immanent norms which control it. Does Dr. Bosanquet, then, furnish a good description? The answer will depend on our attitude towards the time-honored distinction between matter and form. We reason, as Dr. Bosanquet reminds us, "geometrically, or musically, or artistically, or morally, or religiously" (p. 96). Is it quite obvious that the essence and excellence of reasoning in these different fields are reducible to the same abstractly formal relationships? Dr. Bosanquet urges, in effect, that the 'matter' is not indifferent, and that unless we base our theory on "actual acquaintance with reasoning as conducted by great writers and capable publicists" (p. v) we shall be in danger of standardizing, as the essence of reasoning, the special character of reasoning on such abstract relationships as are investigated by 'formal' logic.

2. Again, it is argued that logic can have no concern with any "operation by which knowledge is extended," because it has no concern with knowledge at all. Logic, we are told by these critics, is a purely objective science, as objective as physics. With the relation of objects to a knowing mind, or with the acts and states through which a mind knows, it has nothing to do. Theory of knowledge is a mere hybrid of logic and psychology, for mind and its activities in the cognitive relation belong to psychology, whereas logic studies the most general properties of all objects whatsoever. It is not restricted to this actual world of ours: it deals with what is true of all possible worlds. Postponing for the moment the concept of 'mind,' let us

keep to 'knowledge' and note, as fundamental, that Dr. Bosanquet does not accept the analysis of knowledge as a relation of which mind and object are the antithetic terms. This is how he speaks of a scientist reasoning out a new theory: "The whole conation of your mind is as nearly as possible identified with a comprehensive body of organised data and relations, and these of themselves dictate their further development" (p. 122). Reasoning, here, is clearly not conceived as a mind's arbitrary operation on an object standing over against it, but as the self-development of a subject, or problem, in or through the mind. The process, so far as it is logical, is controlled by what the object-complex is and implies. In contrast to the prevailing fashion of analytical thinking, it is surely worth while to see what a synoptic theory can do—a theory which genuinely takes knowledge as *sui generis*, by considering the world of objects as what it is 'known' to be, which means as what it is perceived, judged, inferred to be. Thus considered, the object-world is certainly undergoing a unique sort of transformation which we call the 'progress' of knowledge. The world as we know it is not the world as our forefathers knew it. What boots it to insist that this progress is a change 'in us,' not in the objective world? No asseveration of this point will relieve a realist from the fact that by the term 'object-world' he can mean only the world as he then and there thinks it to be. If he shares the common human fate of learning more and better, then the world as he now judges it to be will be by so much different from what it was for him before. Be we realists or be we idealists, this surely is the fact which we must both acknowledge. And if once we get *habituated* to not divorcing the object-world from what it is known to be and from the development of this knowledge, we must concede that an enquiry into the principles operative in this development is legitimate, and constitutes a philosophical discipline in its own right. But why, the critic may still insist, call it 'logic'? Why not? we might retort. But lest the argument at this point degenerate into a wrangle about words, let us plead that the justification for this use of the term 'logic' is historical, that it is derived by direct descent from Kant's concept of 'transcendental logic,' which, in turn, is connected with the central problem of Aristotelian logic, *viz.*, the problem of demonstration or proof, when that is given the specific form of asking how we can prove that this actual world of ours is really what we know, *i.e.*, perceive and think it to be.

3. Meanwhile, it is not irrelevant to observe that those who assign

to logic the study of the most general properties of 'all possible' objects, cannot, as philosophers, escape facing this problem of the truth of our knowledge of the actual world as we have it, *e.g.*, in the empirical sciences. Yet when the mathematical logician, with the resources of his logic, turns to this problem, what happens? So far as one can judge, one of three things. (a) He dodges the problem by falling back on the distinction between formal consistency and material truth. But if the matter of an argument is the purely supposititious filling of a form, and if the conclusiveness of the argument in no way depends on the concrete meaning of the terms employed, *i.e.*, on the actual data and connections of experience which are expressed through them, then all that is categorically asserted is the logical form itself. This means that all we really 'know,' or can prove beyond the shadow of a doubt, is the formal nexus itself, *e.g.*, $M P, S M, \therefore S P$. Whether in any actual argument the concrete terms are rightly treated as values for the variables M, P, S , *i.e.*, whether they really have the required formal properties and relations, this does not concern the formal logician. It is enough for him to say that *if* they have, then the conclusion necessarily follows. The effect is inevitably to shrink the area of genuine knowledge to the purely deductive and *a priori* sciences, *i.e.*, to pure logic and mathematics. But what becomes of what we usually call 'knowledge,' *e.g.*, the reasonings of the empirical sciences? The answer is that they possess neither necessity nor self-evidence. They are not, and cannot be, demonstrated. They might be otherwise. We may call them probable and good enough for practical use, if we please, but logically they are open to irremediable doubt. This explains the noticeable helplessness of formal logicians in the face of the problem of induction. As a rule, they see clearly enough that induction by simple enumeration, even eked out by the laws of probability, will not justify the procedure of the sciences. Hence they conclude that, as induction does not demonstrate and self-evidence is lacking, the natural sciences, and, *a fortiori*, all other beliefs concerning the real world of our experience, hang logically in the air. We have here one of the roots of the revival of the division of judgments into those which are necessary and those which are contingent, as well as of the affiliated distinction between the 'actual' and 'all possible' universes. (b) A very different line of treatment which, if successful, would annul these distinctions, is attempted in Russell and Whitehead's *Principia Mathematica*, the programme of which appears to be to

build up, by strictly deductive steps, the concepts of the whole body of sciences from a few ultimate logical entities. For all its volume, the argument has not yet begun to touch the bulk of the empirical sciences, and it is no surprise to learn that some competent mathematical logicians hold it to be doomed to failure on intrinsic grounds. In any case, it would seem that the deductive transition from abstract forms to actual sense-data involves a synthetic step the legitimacy of which is difficult to justify on purely formal grounds. It is noticeable that Mr. Russell himself elsewhere not only shows himself profoundly conscious of the gap between pure forms and sense-data, but swings back thence to the familiar antithesis between the certainties of logic and the incurable uncertainties of the world of sense. (c) Even when, in yet another mood, Mr. Russell makes the experiment of treating both sense-data and logical forms as 'hard,' *i.e.*, as possessing a certainty beyond the reach of doubt, and tries to construct the familiar things of perception purely out of such 'hard' elements, what is really significant is not the ingenuity of his constructs, but the underlying attitude of doubt towards the bulk of current scientific judgments, and, *a fortiori*, towards all reasoning on matters ethical, political, or religious. In the face of this deliberate revival of the Cartesian method of doubt, is there not an opening for a theory which, like Dr. Bosanquet's, attempts to bring all reasoning under a single principle, and to grade its certainty, not by the standard of the abstractly formal sciences, but by the degrees of 'insight' into the diverse systems and orders of phenomena which constitute our actual world?

4. This brings us straight to what is, in the context of present-day discussion, probably the crux of Dr. Bosanquet's whole position. "Insight," it may be said, "is a mystic term. It may bring to the individual a subjective certainty, immune to doubt or logical challenge. But for those who do not share his insight it is nothing, and if by knowledge we are to mean judgments or beliefs which can be logically justified, then no insight can be admitted which does not submit to logical tests." Now, Dr. Bosanquet's crucial doctrine is just the intimate connection of 'insight' or 'intuition' with logic, and hence with what it is necessary and rational to believe. "Intuition or insight means looking at an object intrinsically systematic and distinct, and discerning its constitutive terms and relations. So far from being illogical, it is the essential feature of the higher form of inference" (p. 94). This concept of insight which Dr. Bosanquet

himself allies with Husserl's account of the self-evidence of universal connections, has its historical roots, of course, in Aristotle's *νοῦς*, Hegel's reason, and Bradley's account of inference as a construction crowned by an intuition. It stands, in short, for the grasp of universals, for responsiveness to implications of any and every kind. Now, is there any good ground for denying that the empirical world is full of universals, *i.e.*, systems of terms in relations, the elements of which anyone thoroughly familiar with them can see to be necessarily implied by each other? The question for Dr. Bosanquet answers itself in the negative. And with this answer disappears the justification for the sharp antithesis of 'matter' and 'form.' Logic, as the theory of the 'forms' of reasoning, is a theory of the types of universals in the structure of the empirical world. It follows that 'material' differences are not irrelevant for it, for they are differences in the kind of universal, *i.e.*, in the concrete nature (the quality as experienced) of the terms and relations which are the subjects of our judgments. Dr. Bosanquet's whole position may not unfairly be paraphrased by saying that the attainment of knowledge depends everywhere on the discovery in the given facts of their implications with other facts, and thus of the system which enables us to see that the given is so because it must be so and could not in its actual context be otherwise. This is to 'know,' *i.e.*, logically to justify and understand the actual world we live in.

5. But what are we to say when insights conflict? As Dr. Bosanquet himself puts it, "my insight carries me to this conclusion and yours to that, and how are we to reason upon them?" (p. 125). Thus, *e.g.*, in this very dispute about necessary and contingent truths, logicians of acuteness and power are ranged on opposite sides. And, anyhow, if this distinction between necessity and contingency be denied in principle, how are we to deal with those differences in cognitive value—to avoid the phrase 'degrees of truth'—of which that distinction claims to supply the explanation? As regards the conflict between one man's insight and another's, two points need to be borne in mind. (*a*) The first is that no theory has been, or can be, offered which, by a test applied *ab extra*, can put the hall-mark of final truth upon this view or that. All that the critic can do is by first hand study of the whole subject to form his own judgment, and his conclusion, whatever it may be, will be determined by his grasp of the systematic interconnections of the subject and, if he is open-minded, by nothing else. The whole and sole problem is to understand the

source of the confidence with which each disputant affirms his own conclusion: no other, he claims, can he reach consistently with the evidence before him, and if his opponent could only see things in the same way, he would be bound to come to the same conclusion. (b) And here, at once, is the second point. There is no method known by which, over the whole range of human experience, we can infallibly secure this 'seeing things the same way.' Sometimes an appeal to perception is possible and suffices. More often differences of past experience, of training, of temperament, prevent any complete 'getting together,' though we may argue until patience gives out. We may each be convinced and yet be unable to convince the other. Thus we come back to this, that the point of logical interest is to note how everywhere a claim to truth can be supported in one way, and one way only, *viz.*, through the exhibition of all the evidence which necessarily implies the conclusion and which, once admitted, compels the acceptance of that conclusion. "But this makes knowledge relative and provisional," it may be said. Yes, it does. But can we in the face of common experience deny this relativity? "But what of mathematics with its self-evident coherence? What of the sciences with their large areas of methodically established theory, agreed to by all competent enquirers?" This leads to a further point. "There are two aspects, and not one only, in which an intimate logical dependence on the whole of experience may display itself" (p. 92). (a) In highly abstract matters, *e.g.*, in mathematics where, given an appropriate set of postulates and the general principles of logic, the system develops itself in a way which makes the implications directly obvious, necessity and self-evidence are more easily and completely apprehended than elsewhere. But—and this is one of Dr. Bosanquet's most suggestive points—we ought not to ignore that insight is here facilitated by the high degree of abstraction from the concrete actualities of experience. (b) Yet in the reasoning about these latter there is necessity and self-evidence, too, but harder to trace and appreciate because their implications ramify through the whole tissue of our experience. In this sense Dr. Bosanquet would vindicate "the substantially *a priori* character of judgments of value considered as the central example of propositions which sum up the implications of highly individual systems deeply interdependent with our whole experience" (p. 95). In this sense he urges that "if anyone were to deny that civilisation, or beauty, or religion, were inevitable components of human experience, and that their respective leading

implications belong to the most irrefragable class of truths, he would easily be shown to be in a self-contradiction by the test of 'this or nothing' " (p. 92). Not that we understand these systems sufficiently to be able to claim final truth anywhere, but we do have enough insight into them to be safe against the doubt that we possess no truth at all. In this way Dr. Bosanquet's "unitary theory of truth" tries to justify the trustworthiness of our knowledge in principle without making absolute claims in detail. "Truth I believe to be the degree in which the character of reality is present within a proposition or system of propositions; it is the life of knowledge, as various as beauty or goodness, and no less impossible to recognise by formal tests. That is why I have said that it is only to be verified by the self-criticism of the system to which it belongs" (p. 102).

6. So far we have kept to the term 'knowledge.' But what about 'mind'? In what sense can we reasonably hold, as Dr. Bosanquet does, that we must "study logic in the light of the mind"? This question cuts deep into the whole idealistic-realistic controversy. Dr. Bosanquet defines his position with special reference to Husserl's exhaustive discussion of "psychologismus" and "reine Logik." He concedes the whole case against psychologism. The 'laws of thought,' with which logic is commonly said to deal, cannot be merely empirical generalisations concerning the mental habits of men or any other species of animals. This would open the fatal possibility that what by the laws of our thought we must think, is quite other than what the world really is. But must we jump to the opposite extreme and make of logic a science of objects, regardless of any being's capacity to apprehend them? For all the pure logician can tell, it is a pure accident that his own mind apprehends the logical properties of objects at all and apprehends them as they really are. For Dr. Bosanquet the moral—witness Husserl's appeal to insight—is, that the divorce of mind and object must be rescinded; in other words, that for the antithesis of mind and object in the cognitive relation we must substitute a study of the object as what it is perceived and thought to be. For there, and there only, is its real character to be found, in proportion to the degree in which its details are seen to be necessary by their mutual implication in an actual system. This is the context in which Dr. Bosanquet's use of the terms 'reality,' 'knowledge,' and 'mind,' must be understood. In this sense he speaks of mind as a "focus" of objects, and of thinking, or reasoning, as the "life" or "self-development" of objects through their

mutual implications in such a focus. In this sense he declares that "truth is reality as it makes itself known through particular minds in the form of ideas.¹ Ideas are pronounced by discursive thought to belong to or express the nature of reality; and this character of thought, which claims the title of truth, is a mode in which reality, the nature of the universe, manifests itself, and is present and living" (p. 150). In this sense he claims for his view that it holds together, in an intelligible synthesis, aspects which we cannot deny, but which it is far easier to oppose to each other than to combine together in a single coherent view. "Certainly truth comes to be when we find it out; the very determinations in which it consists, the selection and connection of things and relations, have for all we know no emphasis, no distinguished place in the scheme of the universe before or apart from our mental operations. But no less certainly it was true before it was found out; if it was not true before it could not be true when it was found out. It is of no use to deny either of these paradoxes; they naturally affirm themselves if we insist on dismembering an essential unity" (pp. 148, 149).

On the whole situation thus created by the impact of Dr. Bosanquet's theory on current tendencies in logic and theory of knowledge, I would offer in conclusion three specific comments.

1. On the very lowest estimate (that is to say, quite apart from siding with, or against Dr. Bosanquet) I submit that our modern discussions of logic are enriched by the vigorous presentation and exploration of just such a view as this. If it is an experiment worth making to see what light can be thrown on knowledge, truth, and reality, by starting with a biological concept of mind, as the attribute of an animal species in its environment, and with a theory of knowledge as a relation between such a mind and the environment; or if it is worth while to give to this experiment the simpler form of distinguishing in every experience between a mental act and a non-mental object—then it is certainly also worth while to try out the experiment of a theory of mind and knowledge which is neither relational nor biological, but which regards a mind as a focus of objects, and this form of togetherness of objects as the condition of their entering into those logical processes in which, under the control of their own implications, their true nature comes to be fully revealed. All these experiments require to be carried through with an open mind,

¹ I could wish that Dr. Bosanquet had chosen some fresher term than 'idea' which raises the ghosts of many controversies, best forgotten.

which means a mind alive to every fact or consideration bearing upon them, and able to allow to each item of evidence its due weight and place. The true theory will come to be acknowledged as such by its stability, *i.e.*, by the fact that it sums up within itself, and is most consistent with, the whole of our experience, comprehensively and systematically surveyed. Again, if the experiment of the Cartesian method of doubt and of the analytic search for 'hard' data is worth reviving, so also is the experiment of a synthetic appreciation of the certainties and values of civilized life worth continuing. Critics have urged that Dr. Bosanquet's 'fundamental certainties,' as his own examples (beauty, morality, religion) show, are not purely intellectual, but weighted with feeling, of which the critics, implicitly or explicitly, assume that it is in principle non-rational and incapable, even when expressed through art and social organization, of throwing light on the nature of the real world. But the reply is to accept the criticism as unwilling praise. For it is of the essence of Dr. Bosanquet's experiment not to divorce *scientia intuitiva* from *amor intellectualis*. Who, once more, shall say that the experiment is not worth trying, or deny, because it fails in his own hands, that it may not succeed in those of another?

2. As regards the description of the subject matter of logic in terms of 'mind,' it is at least worth observing that, in spite of all their good intentions, realistically-minded thinkers find it exceedingly hard to keep mind consistently out of their theories. However explicitly they may at the outset of their argument bolt the door against the intrusion of mind, it will generally be found to have slipped in unnoticed through some crevice and to have occupied a position at a vital point in the argument. Let one conspicuous example suffice. If, with Mr. Bertrand Russell, we try the experiment of a correspondence theory of truth, it seems, *prima facie*, easy to say that truth consists in a certain relation between a fact-complex and a proposition-complex. So far there has been no mention of 'mind.' But when we analyze a proposition and ask how it comes to be, it appears at once that mind is vitally engaged. For we now learn that a proposition is a "belief," and that somebody's believing is the relating relation, and somebody's mind an indispensable term, in the proposition-complex. Or, again, we are told that from the perceived complex aRb the mind, by selective attention, develops the proposition 'that a stands in the relation R to b .'¹ Thus we move within the circle of what is perceived,

¹ This account may be verified by reference to the *Problems of Philosophy*, Ch. XIII, and to *Principia Mathematica*, p. 45.

and what by insight into the structure and implications of the perceived object is judged to be true. But to recognize that we move within this circle is to acknowledge the central position of mind. Nor is this an 'egocentric predicament.' For there is no limitation of the world to my ego as distinct from yours. On the other hand, to acknowledge, in the more general sense, that reality is an empty word except so far as it derives meaning from what we experience and think, is to acknowledge not a limitation or handicap, but an opportunity.

To this we may add the further observation that, if a fresh approach to the problem of truth and reality is to be attempted, the most promising line of advance would seem to be, not through the 'cognitive relation,' but through the problems of *meaning* and of *expression*. It is noteworthy that Mr. Bertrand Russell has recently turned his attention to the former. And it is the enthusiastic, if exaggerated, emphasis on the latter which gives to the neo-idealism of Croce's school in Italy its chief claim to our attention.

3. Finally it may be suggested that a mind steeped in mathematics and mathematical logic, and profoundly sensitive to the peculiar delight and satisfaction, both æsthetic and intellectual, which these studies can bring, is bound, when it turns to what James called "this Gothic and muddled" world of ours, to miss there the clarity, precision, and perspicuous order to which it had been accustomed. It will be strongly tempted to react with a sceptical and pessimistic estimate. It will certainly react very differently from a mind which comes to philosophy steeped in literature's 'criticism of life,' in the history of civilization and thought, in experience of politics and social reform. It is familiarity with the 'concrete' in this sense which is noticeably the background of all Dr. Bosanquet's philosophical work. I draw attention to this, not only as bearing on the right understanding of his views, but also because it seems to explain part at least of the difference between realism and idealism. At any rate, it is here that we have to look for the source of Dr. Bosanquet's attempt to work out a theory of logic which will endorse the concrete insights mediated by the experience of humanity.

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